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10/500,291

06/29/2004

Kiyofumi Abe

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EXAMINER

ROBERTS, JESSICA M

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/500,291

Applicant(s)

ABE ET AL.

Examiner

Jessica Roberts

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 06/29/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 06/29/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8, 18, and 21-22 are rejected under 35. U.S.C because the claimed invention is directed to non-statutory subject matter (see USPTO Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility).

Claims 1 defines a data stream with descriptive material. While "functional descriptive material" may be claimed as statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, a data stream embodying that same functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101.

Claims 2-8 are rejected for failing to remedy the issue as stated in claim 1. Thus, claims 2-8 are rejected as non-statutory subject matter.

Claim 18 defines a program for causing a computer to execute...". However, the claim does not define a computer readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized"-Guidelines Annex IV). That is, the scope of the presently claimed program can range from paper on which the program is written,

to a program simply contemplated and memorized by a person. The examiner suggest amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Regarding claims 21-22, which recite the common subject matter in claim 18, therefore, the rejection and analysis of claim 18 also apply here.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-22 are rejected under 35 U.S.C. 102(a) as being anticipated by ISO/IEC 14496-2 International Standard, Information technology-Coding of audio—visual objects-Part 2: Visual (herein referenced to as 14496).

4. **Regarding claim 1**, 14496 teaches A data stream that is capable of including an I picture coded by intra picture prediction coding and an inter picture prediction picture coded by inter picture prediction coding where a picture in a forward direction or a backward direction in display order is referred to, the data stream comprising sequence data (6.1.3.7 VOP reordering pg. 22) and an identification signal (low_delay, 6.3.3 Video Object Layer), wherein the sequence data is made of a combination of the inter picture prediction pictures coded by referring to only a picture in the forward direction and the I picture (6.1.3.7 VOP reordering), and the identification signal indicates that a reordering

of the coded pictures in decoding the data stream is unnecessary in the case where no picture that is coded by referring to a picture in the backward direction is included in the sequence data (14496 discloses when the video object layer contains no coded B-VOPs, the decoding order is the same as the display order, see 6.1.3.7 VOP re-ordering. Further, it is clear to the examiner that since 14496 discloses determining whether it is necessary to re-order the VOP, this would also necessitate identification signal (bit flag), to notify or indicate that re-ordering is unnecessary).

5. **Regarding claim 2**, 14496 teaches The data stream according to Claim 1, wherein the data stream is capable of including a forward prediction B picture, a backward prediction B picture, a P picture and the I picture (6.1.3.7 VOP reordering), the forward prediction B picture is the picture coded by inter picture prediction coding where up to two pictures for each block is referred to, the two pictures belonging to pictures in the forward direction (14496 discloses the reordering of pictures where the B frame (2) can be predicted from either the I frame (1) or the P frame (4) 6.1.3.7 VOP reordering), the backward prediction B picture is the picture coded by inter picture prediction coding where up to two pictures for each block is referred to, the two pictures belonging to pictures including at least a single picture in the backward direction (3.6 B-VOP), the P picture is the picture coded by inter picture prediction coding where a single picture that belongs to pictures in the forward direction is referred to for each block (3.147 P-VOP), and the sequence data is made of the I picture, the forward prediction B picture and the P picture (6.1.3.7 VOP reordering)

6. **Regarding claim 3**, 14496 teaches the data stream according to Claim 2, wherein the inter picture prediction pictures include the backward prediction B picture (3.6 B-VOP) identification signal indicates that the reordering of the pictures is necessary in the case where the backward prediction B picture is included in the sequence data (3.190 VOP reordering and [col. 2 line 52-62; Wells]).

7. **Regarding claim 4**, 14496 teaches the data stream according to Claim 1, wherein the data stream is capable of including a forward prediction P picture, a backward prediction P picture and the I picture, the forward prediction P picture is the picture coded by inter picture prediction coding where a single picture that belongs to pictures in the forward direction is referred to for each block (3.81 forward prediction), the backward prediction P picture is the picture coded by inter picture prediction coding where a single picture is referred to for each block (3.8 backward prediction), the single picture belonging to pictures including at least a single picture in the backward direction, and the sequence data is made of the I picture and the forward prediction P picture (14496 discloses that reordering is not necessary if there are no B-frames, which would indicate the streams contains only an I (intra) and P (inter) frame). Thus, it is clear to the examiner that this is indicative of having a stream of pictures that consist only of I and P frames, which read upon the claimed limitation.

8. **Regarding claim 5**, 14496 teaches the data stream according to Claim 4, wherein the inter picture prediction pictures include the backward prediction P picture the identification signal indicates that the reordering of the pictures is necessary in the case where the backward prediction P picture is included in the sequence data (3.127

P-VOP, 6.3.3.7 VOP reordering, and fig. 7-24. Further it is clear to the examiner that in order to decode the B frame, it is necessary to first decode the P frames as the B frame is predicted from the P frame. Therefore, the low_delay bit flag would indicate that reordering of the frames is necessary).

9. **Regarding claim 6**, 14496 teaches the data stream according to one Claim 1, wherein the identification signal is the data indicating delay time between time when a picture has decoded and time when the decoded picture has displayed and indicates that the reordering of pictures is unnecessary in the case where the delay time is set at "0" (14496 discloses the use of a bit flag to indicate if reordering is needed, and there is an associated reordering delay (3.147) caused by the VOP reordering, it is clear to the examiner if there is no need to reorder, then the delay time would equate to "0" indicating there was no delay performed).

10. **Regarding claim 7**, 1446 teaches the data stream according to one of Claim 1, wherein the identification signal is data indicating a largest difference, which is caused by the reordering of pictures, between a decoding order and a display order, and indicating that the reordering of pictures is unnecessary in the case where the largest difference is set at "0" (14496 discloses the use of a bit flag to indicate if reordering is needed, and there is an associated reordering delay (3.147) caused by the VOP reordering, it is clear to the examiner if there is a need for reordering, then the time delay would equate to a value greater than zero, indicating there was reordering performed on the VOP, and in the case when the when the delay is a value of "0", would be indicative of an absence of reordering). **NOTE:** since the reordering delay is

associated with a VOP reordering, and there was no reordering performed, then the delay caused by reordering would not be present.

11. **Regarding claim 8**, 14496 teaches A computer-readable data recording medium for recording a data stream according to Claim 1 (The application associated with 144986 cover, but are not limited to, such areas as listed ISM (interactive storage media (optical disk, etc), see introduction).

12. **Regarding claim 9**, 14496 teaches A coding method for coding pictures using an I picture to be coded by intra picture prediction coding and an inter picture prediction picture to be coded by inter picture prediction coding where a picture in the forward direction or in the backward direction in display order from a picture to be coded is referred to, comprising the steps of: receiving an instruction indicating that coding is performed using pictures made of the I picture and the inter picture prediction picture coded by referring to only a picture in the forward prediction direction (6.1.3.7 VOP reordering); outputting an identification signal indicating that a reordering of pictures is unnecessary in the case of receiving the instruction (6.3.3 Video object layer, low_delay); and coding the combination of pictures in display order together with the identification signal without the reordering (14496 disclose where reordering of the pictures is not necessary if there or no B-VOPs. Further disclosed is that the one bit flag (low_delay) is can be present within the bitstream, and if not, then the default value is 0. Thus, it is clear to the examiner that the low_delay bit flag is coded with the pictures in the display order, if reordering is not necessary.

13. **Regarding claim 10**, see rejection and analysis for claim 2.

14. **Regarding claim 11**, see rejection and analysis for **claim 4**.
15. **Regarding claim 12**, see rejection for **claim 6**.
16. **Regarding claim 13**, see rejection and analysis for **claim 7**.
17. **Regarding claim 14**, 14496 teaches A decoding method for decoding an I picture and an inter picture prediction coding picture, the I picture being coded by intra picture prediction coding and the inter picture prediction coding picture being coded by inter picture prediction coding where a picture in a forward direction or in a backward direction in display order are referred to, comprising steps of: receiving an identification signal indicating that a reordering of pictures is unnecessary and sequence data that is coded in display order (low_delay flag); decoding the sequence data in receiving order according to the identification signal; and outputting the decoded pictures in decoding order so as to be displayed (6.1.3.7 VOP reordering).
18. **Regarding claim 15**, 14496 teaches A decoding method for decoding an I picture and an inter picture prediction coding picture, the I picture being coded by intra picture prediction coding and the inter picture prediction coding picture being coded by inter picture prediction coding where a picture in a forward direction or in a backward direction in display order are referred to, comprising steps of: receiving an identification signal indicating whether or not a reordering of pictures is necessary and sequence data (14496 discloses when the video object layer contains no coded B-VOPs, the decoding order is the same as the display order, see 6.1.3.7 VOP re-ordering. Further, it is clear to the examiner that since 14496 discloses determining whether it is necessary to re-order the VOP, this would also necessitate identification signal (bit flag), to notify or

indicate that re-ordering is unnecessary); judging whether the identification signal indicates that the reordering of pictures is necessary or the reordering of pictures is unnecessary; and outputting the signals of the pictures by decoding the signals in receiving order in the case where it is judged that the identification signal indicates that the reordering of pictures is or unnecessary (14496 discloses that when there are coded B-VOPs, the decoding order is the same as the display order, see 6.1.3.7 VOP reordering), and outputting the pictures by decoding the received signals of the pictures and reordering the pictures in display order in the case where it is judged that the identification signal indicates that the reordering of pictures is necessary (14496 discloses where there are two coded B-VOPs between successive coded P-VOPs and also two coded B-VOPs between successive coded I and P-VOPs, the order of the coded VOPs in the coded sequence shall be 1I, '4P', '2B', '3B'. However, the decoder shall display them in the order '1I', '2B', '3B' '4P', see 6.1.3.7 VOP reordering) Further, it is clear to the examiner since 14496 reorders the pictures when necessary, and disclosed is a one bit flag (low_delay, 6.3.3 Video object layer) to indicate the presence of B-VOPs, and the reordering is based on the presence of B-VOPs, this would necessitate that the bit flag has judged whether or not reordering of the pictures are necessary..

19. **Regarding claim 16**, see rejection and analysis made in **claim 6**.
20. **Regarding claim 17**, see rejection and analysis made in **claim 7**.
21. **Regarding claim 18**, 14496 teaches A program for causing a computer to execute a coding method according to Claim 9 (the use of ISO/IEC 14496 means that

motion video can be manipulated as a form of computer data and stored on various storage media, transmitted and received over existing and future networks and distributed on existing and future broadcast channels, see introduction).

22. Regarding claim 19, see rejection and analysis made in claim 6.

23. Regarding claim 20, see rejection and analysis made in claim 7.

24. Regarding claims 21-22, 14496 teaches a computer based system. Hence, a computer and a computer program for executing the necessary steps corresponding to the decoding methods of claims 14-15 would have been inherent.

Examiner's Note

25. The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
27. Veltman et al., US-5, 386,234 Interframe motion predicting method and picture signal coding/decoding apparatus
28. Wise et al., US-5, 978,592 Video decompressions and decoding system utilizing control and data tokens.
29. Linzer et al., US-6, 091,776 Delay balanced video encoder system
30. Wada et al., US-2005/0089313 Recording and play reproducing device
31. Wells et al., US-7, 068,722 Content adaptive video processor using motion compensation
32. Haskell et al., US-2004/0017851 Method and apparatus for variable accuracy inter-picture timing specification for digital video encoding with reduced requirements for division operations
33. Tahara et al., US-5, 473,380 Picture signal transmitting method and apparatus

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Roberts whose telephone number is (571) 270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax

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phone number for the organization where this application or proceeding is assigned is
571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jessica M. Roberts/

Marsha D Banks-Harold

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